Agency for Healthcare Research and Quality
Advancing Excellence in Health Care

NATIONAL QUALITY MEASURES CLEARINGHOUSE

General

Title

Influenza vaccination: percentage of healthcare personnel (HCP) who receive the influenza vaccination.

Source(s)

Division of Healthcare Quality Promotion, National Center for Emerging, Zoonotic and Infectious Diseases. The National Healthcare Safety Network (NHSN) Manual. Healthcare personnel safety component protocol: healthcare personnel vaccination module: influenza vaccination summary. Atlanta (GA): Center for Disease Control and Prevention (CDC); 2013 Jan 1. various p.

Measure Domain

Primary Measure Domain

Clinical Quality Measures: Process

Secondary Measure Domain

Does not apply to this measure

Brief Abstract

Description

This measure is used to assess the percentage of healthcare personnel (HCP) who receive the influenza vaccination.

Rationale

The Advisory Committee on Immunization Practices (ACIP) recommends that all persons six months of age and older, including healthcare personnel (HCP) and persons in training for healthcare professions, should be vaccinated annually against influenza. Persons who are infected with influenza virus, including those who are pre-symptomatic, can transmit the virus to coworkers and patients, including those at higher risk for complications from influenza. Vaccination of working age adults, including HCP, has been associated with reduced risk of influenza illness, and reduced work absenteeism, antibiotic use, and medical visits. In addition, HCP vaccination has been found to reduce deaths among nursing home patients and elderly hospitalized patients. Although annual vaccination is recommended for all HCP and is

a high priority for reducing morbidity associated with influenza in healthcare settings, national survey data have demonstrated that vaccination coverage levels are only approximately 60%. This is well below the Healthy People 2020 goal of 90% for HCP influenza vaccination.

Healthcare facilities should provide influenza vaccine to HCP using approaches that have demonstrated effectiveness in increasing vaccination coverage. Healthcare administrators should consider the level of vaccination coverage among HCP to be one measure of a patient safety quality program and consider obtaining signed declinations from personnel who decline influenza vaccination for reasons other than medical contraindications. Influenza vaccination rates (including ward-, unit-, and specialty-specific coverage rates) among HCP within facilities should be regularly measured and reported to facility administrators and staff.

Healthcare facilities should offer influenza vaccinations to all HCP, including night, weekend, and temporary staff. Efforts should be made to educate HCP regarding the benefits of vaccination and the potential health consequences of influenza illness for their patients, themselves, and their family members. Studies have demonstrated that organized campaigns can attain higher rates of vaccination among HCP with moderate effort and by using strategies that increase vaccine acceptance. All HCP should be provided convenient access to influenza vaccine at the work site, free of charge.

Evidence for Rationale

Bridges CB, Thompson WW, Meltzer MI, Reeve GR, Talamonti WJ, Cox NJ, Lilac HA, Hall H, Klimov A, Fukuda K. Effectiveness and cost-benefit of influenza vaccination of healthy working adults: A randomized controlled trial. JAMA. 2000 Oct 4;284(13):1655-63. PubMed

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Infectious Diseases Society of America. Pandemic and season influenza: principles for U.S. action. Arlington (VA): Infectious Diseases Society of America; 2007.

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Joint Commission on Accreditation of Healthcare Organizations. New infection control requirement for offering influenza vaccination to staff and licensed independent practitioners. Jt Comm Perspect. 2006 Jun;26(6):10-1. PubMed

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National Quality Forum. National Voluntary Consensus Standards for Influenza and Pneumococcal Immunizations. Washington (DC): National Quality Forum; 2008. 68 p.

Pearson ML, Bridges CB, Harper SA. Influenza vaccination of health-care personnel: recommendations of the Healthcare Infection Control Practices Advisory Committee (HICPAC) and the Advisory Committee on Immunization Practices (ACIP). MMWR Recomm Rep. 2006 Feb 24;55(RR-2):1-16. [137

references] PubMed

Poland GA, Tosh P, Jacobson RM. Requiring influenza vaccination for health care workers: seven truths we must accept. Vaccine. 2005 Mar 18;23(17-18):2251-5. PubMed

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Potter J, Stott DJ, Roberts MA, Elder AG, O'Donnell B, Knight PV, Carman WF. Influenza vaccination of health care workers in long-term-care hospitals reduces the mortality of elderly patients. J Infect Dis. 1997 Jan;175(1):1-6. PubMed

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U.S. Department of Health and Human Services. Healthy People 2020 summary of objectives: immunization and infectious diseases. [internet]. [accessed 2012 Jun 15].

Walker FJ, Singleton JA, Lu P, Wooten KG, Strikas RA. Influenza vaccination of healthcare workers in the United States, 1989-2002. Infect Control Hosp Epidemiol. 2006 Mar;27(3):257-65. PubMed

Zhang Z, Euler GL, Graitcer SB, Greby S. Health care personnel flu vaccination - internet panel survey, United States, November 2012. [internet]. Atlanta (GA): Centers for Disease Control and Prevention (CDC); [accessed 2013 Jun 25].

Primary Health Components

Influenza vaccination; healthcare personnel (HCP)

Denominator Description

Healthcare personnel (HCP) who are physically present in the healthcare facility for at least 1 working day between October 1 and March 31 of the following year (see the related "Denominator Inclusions/Exclusions" field)

Numerator Description

Healthcare personnel (HCP) in the denominator population, who during the time from when the vaccine became available (e.g., August or September) through March 31 of the following year:

- Received an influenza vaccination administered at the healthcare facility; or
- Reported in writing (paper or electronic) or provided documentation that influenza vaccination was received elsewhere; or
- Were determined to have a medical contraindication/condition of severe allergic reaction to eggs or to other component(s) of the vaccine, or history of Guillain-Barré syndrome within 6 weeks after a previous influenza vaccination; or
- Were offered but declined influenza vaccination; or
- Had an unknown vaccination status or did not otherwise meet any of the definitions of the above-mentioned numerator categories.

See the related "Numerator Inclusions/Exclusions" field.

Evidence Supporting the Measure

Type of Evidence Supporting the Criterion of Quality for the Measure

A clinical practice guideline or other peer-reviewed synthesis of the clinical research evidence

A systematic review of the clinical research literature (e.g., Cochrane Review)

One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

Additional Information Supporting Need for the Measure

Unspecified

Extent of Measure Testing

Reliability was assessed by comparing agreement between facility staff and project staff on the classification of healthcare personnel (HCP) numerator (vaccinated at facility, vaccinated elsewhere, contraindicated, declined) and denominator (employees, credentialed nonemployees, other nonemployees) categories. To assess validity, facility staff completed a series of case studies to evaluate how closely classification of HCP groups aligned with the measure's specifications. In a modified Delphi process, experts rated face validity of the proposed measure elements on a Likert-type scale.

Participants were staff from 96 healthcare facilities (including acute care hospitals, long-term care facilities, ambulatory surgery centers, physician practices, and dialysis centers from 3 U.S. jurisdictions) randomly sampled from 234 facilities that completed pilot testing to assess the feasibility of the measure.

Percent agreement was high for HCP vaccinated at the facility (99%) and elsewhere (95%) and was lower for HCP who declined vaccination (64%) or were medically contraindicated (64%). While agreement was high (more than 90%) for all denominator categories, many facilities' staff excluded nonemployees for whom numerator and denominator status was difficult to determine. Validity was lowest for credentialed and other nonemployees.

The standardized measure of HCP influenza vaccination yields reproducible results for employees vaccinated at the facility and elsewhere. Adhering to true medical contraindications and tracking declinations should improve reliability. Difficulties in establishing denominators and determining vaccination status for credentialed and other nonemployees challenged the measure's validity and prompted revision to include a more limited group of nonemployees.

Evidence for Extent of Measure Testing

Libby TE, Lindley MC, Lorick SA, MacCannell T, Lee SJ, Smith C, Geevarughese A, Makvandi M, Nace DA, Ahmed F. Reliability and validity of a standardized measure of influenza vaccination coverage among healthcare personnel. Infect Control Hosp Epidemiol. 2013 Apr;34(4):335-45. [34 references] PubMed

State of Use of the Measure

State of Use

Current routine use

Current Use

not defined yet

Application of the Measure in its Current Use

Measurement Setting

Ambulatory/Office-based Care

Ambulatory Procedure/Imaging Center

Hospital Inpatient

Hospital Outpatient

Long-term Care Facilities - Other

Rehabilitation Centers

Skilled Nursing Facilities/Nursing Homes

Professionals Involved in Delivery of Health Services

not defined yet

Least Aggregated Level of Services Delivery Addressed

Single Health Care Delivery or Public Health Organizations

Statement of Acceptable Minimum Sample Size

Unspecified

Target Population Age

Unspecified

Target Population Gender

Either male or female

National Strategy for Quality Improvement in Health Care

National Quality Strategy Aim

Better Care

National Quality Strategy Priority

Health and Well-being of Communities
Prevention and Treatment of Leading Causes of Mortality

Institute of Medicine (IOM) National Health Care Quality Report Categories

IOM Care Need

Staying Healthy

IOM Domain

Effectiveness

Data Collection for the Measure

Case Finding Period

October 1 to March 31

Denominator Sampling Frame

Professionals/Staff

Denominator (Index) Event or Characteristic

Health Professional Characteristic

Denominator Time Window

not defined yet

Denominator Inclusions/Exclusions

Inclusions
Healthcare personnel (HCP) who are physically present in the healthcare facility for at least 1 working day between October 1 and March 31 of the following year

Denominators are to be calculated separately for three required categories of HCP and can also be calculated for a fourth optional category:

Employees: This includes all persons who receive a direct paycheck from the reporting facility (i.e., on the facility's payroll), regardless of clinical responsibility or patient contact.
Licensed independent practitioners (LIPs): This includes physicians (MD, DO), advanced practice nurses, and physician assistants only who are affiliated with the reporting facility, but are not directly employed by it (i.e., they do not receive a paycheck from the facility), regardless of clinical responsibility or patient contact. Post-residency fellows are also included in this category if they are not on the facility's payroll.
Adult students/trainees and volunteers: This includes medical, nursing, or other health professional students, interns, medical residents, or volunteers aged 18 or older who are affiliated with the healthcare facility, but are not directly employed by it (i.e., they do not receive a paycheck from the facility), regardless of clinical responsibility or patient contact.
Other contract personnel (optional): Facilities may also report on individuals who are contract personnel. However, reporting for this category is optional at this time. Contract personnel are defined as persons providing care, treatment, or services at the facility through a contract who do not fall into any of the above-mentioned denominator categories. (Refer to Appendix A in the original measure documentation for a suggested list of contract personnel.)

Note:

The denominator includes HCP who have worked at the facility for at least 1 working day between October 1 and March 31 during the reporting period, regardless of clinical responsibility or patient contact. This includes HCP who joined after October 1 or left before March 31, or who were on extended leave during part of the reporting period. Work for any number of hours a day counts as one working day.
Both full-time and part-time personnel should be included. HCP should be counted as individuals rather than full-time equivalents. If a healthcare worker (HCW) works in two or more facilities, each facility should include the HCW in their denominator.
Licensed practitioners who receive a direct paycheck from the reporting facility, or who are owners of the reporting facility, should be counted as employees.
The denominator categories are mutually exclusive. The numerator data are to be reported separately for each of the denominator categories.

Exclusions
Unspecified

Exclusions/Exceptions

not defined yet

Numerator Inclusions/Exclusions

Inclusions
Healthcare personnel (HCP) in the denominator population, who during the time from when the vaccine became available (e.g., August or September) through March 31 of the following year:

Received an influenza vaccination administered at the healthcare facility; or
Reported in writing (paper or electronic) or provided documentation that influenza vaccination was received elsewhere; or
Were determined to have a medical contraindication/condition of severe allergic reaction to eggs or to other component(s) of the vaccine, or history of Guillain-Barré syndrome within 6 weeks after a previous influenza vaccination; or
Were offered but declined influenza vaccination; or
Had an unknown vaccination status or did not otherwise meet any of the definitions of the above-mentioned numerator categories.

Note:

Persons who declined vaccination because of conditions other than those specified in category (c) above should be categorized as declined vaccination.*
Persons who declined vaccination and did not provide any other information should be categorized as declined vaccination.
Persons who did not receive vaccination because of religious or philosophical exemptions should be categorized as declined vaccination.
Persons who deferred vaccination all season should be categorized as declined vaccination.

The numerator data are mutually exclusive. The sum of the numerator categories should be equal to the denominator for each HCP group.

*For the purposes of this measure, a medical contraindication to vaccination with inactivated influenza vaccine (IIV) is defined as having a severe allergic reaction to eggs or other components of the influenza vaccine or a history of GBS within 6 weeks after a previous influenza vaccination. A healthcare facility may grant medical exemptions to HCP with other conditions besides those defined by the measure and may include these conditions in its list of acceptable medical contraindications to influenza vaccination. However, to ensure that data are comparable across different facilities reporting data using this measure, only those HCP with one of the two conditions stated above should be reported to NHSN as having a medical contraindication to influenza vaccination.

For this measure, vaccination with LAIV4 is medically contraindicated for the following groups: persons aged greater than 49 years; persons who have experienced severe allergic reactions to the vaccine or any of its components, or to a previous dose of any influenza vaccine; pregnant women; immunosuppressed persons; persons with a history of egg allergy; and persons who have taken influenza antiviral medications within the previous 48 hours. In addition to the groups for whom LAIV is not recommended, the following conditions are precautions for the use of LAIV: chronic pulmonary, cardiovascular (except isolated hypertension), renal, hepatic, neurologic, hematologic, and metabolic disorders (including diabetes mellitus) and asthma. Persons who care for severely immunosuppressed persons who require a protective environment should not receive LAIV, or should avoid contact with such persons for 7 days after receipt, given the theoretical risk for transmission of the live attenuated vaccine virus. HCP who have a medical contraindication to LAIV other than a severe allergic reaction to a vaccine component or history of Guillain-Barré Syndrome within 6 weeks after a previous influenza vaccination, should be offered inactivated influenza vaccine by their facility, if available. Contraindications to LAIV4 other than a severe allergic reaction after a previous vaccine dose or to a vaccine component, including egg protein, and history of Guillain-Barré Syndrome within 6 weeks after a previous influenza vaccination are not acceptable medical contraindications for this measure.

Exclusions

None

Numerator Search Strategy

Fixed time period or point in time

Data Source

Administrative clinical data

Administrative management data

Electronic health/medical record

Paper medical record

Patient/Individual survey

Type of Health State

Does not apply to this measure

Instruments Used and/or Associated with the Measure

Healthcare Personnel Influenza Vaccination Summary (see: http://www.cdc.gov/nhsn/forms/57-214-HCP-Influenza-Vaccination-Summary-Form.pdf)

Computation of the Measure

Measure Specifies Disaggregation

Measure is disaggregated into categories based on different definitions of the denominator and/or numerator

Basis for Disaggregation

This measure is disaggregated according to the following mutually exclusive denominator categories:

- Employees
- Licensed independent practitioners
- Adult students/trainees and volunteers
- Other contract personnel (optional)

Scoring

Rate/Proportion

Interpretation of Score

Desired value is a higher score

Allowance for Patient or Population Factors

not defined yet

Standard of Comparison

not defined yet

Prescriptive Standard

Objective: 90% coverage

Evidence for Prescriptive Standard

Libby TE, Lindley MC, Lorick SA, MacCannell T, Lee SJ, Smith C, Geevarughese A, Makvandi M, Nace DA, Ahmed F. Reliability and validity of a standardized measure of influenza vaccination coverage among healthcare personnel. Infect Control Hosp Epidemiol. 2013 Apr;34(4):335-45. [34 references] PubMed

U.S. Department of Health and Human Services. Healthy People 2020 summary of objectives: immunization and infectious diseases. [internet]. [accessed 2012 Jun 15].

Identifying Information

Original Title

Healthcare personnel (HCP) influenza vaccination measure.

Submitter

Centers for Disease Control and Prevention - Federal Government Agency [U.S.]

Developer

Centers for Disease Control and Prevention - Federal Government Agency [U.S.]

Funding Source(s)

This work was supported by the Centers for Disease Control and Prevention (CDC).

Composition of the Group that Developed the Measure

Public health, medical, and health care quality professionals

Financial Disclosures/Other Potential Conflicts of Interest

None of the authors has any financial or proprietary interest in this work.

Endorser

National Quality Forum - None

NQF Number

not defined yet

Date of Endorsement

2013 May 24

Measure Initiative(s)

Ambulatory Surgery Center Quality Reporting Program

Hospital Compare

Hospital Inpatient Quality Reporting Program

Hospital Outpatient Quality Reporting Program

Inpatient Psychiatric Facility Quality Reporting Program

Adaptation

This measure was not adapted from another source.

Date of Most Current Version in NQMC

2013 Jan

Measure Maintenance

Every three years

Date of Next Anticipated Revision

2015 May

Measure Status

This is the current release of the measure.

The measure developer reaffirmed the currency of this measure in December 2015.

Measure Availability

Source available from the Centers for Disease Control and Prevention (CDC) Web site .

For more information, contact Megan C. Lindley, MPH at the CDC, 1600 Clifton Road NE, Mailstop A-19, Atlanta, GA, 30333; Phone: 404-639-8717; E-mail: mlindley@cdc.gov.

NQMC Status

This NQMC summary was completed by ECRI Institute on December 2, 2013. The information was verified by the measure developer on December 13, 2013. The information was reaffirmed by the measure developer on December 24, 2015.

Copyright Statement

Production

Source(s)

Division of Healthcare Quality Promotion, National Center for Emerging, Zoonotic and Infectious Diseases. The National Healthcare Safety Network (NHSN) Manual. Healthcare personnel safety component protocol: healthcare personnel vaccination module: influenza vaccination summary. Atlanta (GA): Center for Disease Control and Prevention (CDC); 2013 Jan 1. various p.

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